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EXAMINER

VILLECCO, JOHN M

ART UNIT	PAPER NUMBER
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2612

DATE MAILED: 10/01/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/096,395

Applicant(s)

TOYOFUKU ET AL.

Examiner

John M. Villecco

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 July 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-18, 20 and 22-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-18, 20 and 22-28 is/are rejected.
- 7) ☒ Claim(s) 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 03 July 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION II

Drawings

1. The corrected or substitute drawings were received on 03 July 2002. These drawings are accepted.

Response to Arguments

2. Applicant's arguments filed 03 July 2002 have been fully considered but they are not persuasive.
3. Regarding claim 14 applicant argues that Fujimori neither describes nor suggests recording a panoramic image and that Okauchi does not disclose a way to deal with insufficient memory. Therefore, there is no reason to combine the two references. However, it is submitted that Fujimori discloses a process of monitoring the memory of an imaging device and letting the user know how many images are remaining on the memory card. Okauchi discloses that taking a number of images and combining them to form a high quality image is well known in the art. Using the aforementioned reference in combination would have been obvious since it would have been obvious to use the method of controlling the taking of a panoramic image (as disclosed in Okauchi) with the memory capacity detection of Fujimori since it would provide a way to deal with the excessive amount of memory generated by the plurality of images being taken in Okauchi. Furthermore, Okauchi discloses that a plurality of frame images are taken of different areas and combined to form a high quality image. This is akin to forming a panoramic image.

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Additionally, applicant argues that neither Fujimori nor Okauchi discloses a feature for presetting the number of image frames for a panoramic image. Applicant states that Okauchi discloses automatically detecting a predicted number of frame images. While it is admitted that Okauchi does disclose automatically predicting the number of frames, Okauchi also discloses in column 7, line 51, that the number of divided images can be arbitrary selected. In order to change from the disclosed 9 images (col. 7, line 46), the number of divided images would have to be set beforehand prior to the imaging and calculating. Therefore, the number of divided images would be preset.

Moreover, applicant states that the examiner admits that neither Fujimori nor Okauchi discloses warning a user of insufficient memory. However, examiner admitted that Fujimori doesn't disclose a generating a warning based on a comparison of frames remaining and the predicted number of frames. Fujimori does, on the other hand, disclose generating a warning when there is not enough memory to take another image. Therefore, it would have been obvious to combine the teaching of Okauchi and Fujimori to generate a warning based on the comparison of predicted frames of Okauchi to the number of remaining frames in Fujimori so the user is informed whether or not there is sufficient memory to complete the photographing operation.

4. As for claim 15, applicant argues that neither of the references addresses the problem of insufficient memory in panoramic photography and that there is no motivation to combine. Similarly to the argument above, Fujimori discloses the need to recognize the amount of available memory in saving a plurality of image data. Moghadam on the other hand discloses combining a plurality of images to form a panoramic image. The data generated by the images of Moghadam is inherently stored in some way. Since Moghadam discloses storing a plurality of

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images it would have been obvious to one of ordinary skill in the art to manage the data of Moghadam by detecting the amount of storage left in the memory.

5. With regard to claims 25 and 27, applicant argues that Moghadam fails to disclose at least one piece of identification information representing the set of panoramic images. However, the examiner believes that the information stored in the header indicates at least one piece of identification information representing the panoramic image set. Moghadam does disclose the ability to take a plurality of panoramic images (col. 4, lines 7-10). Inherently the identifiers would have to include identification means for each of the panoramic image sets so that they can be reconstructed in the correct fashion. Therefore, identification information would inherently have to be included.

6. For the reasons stated above the rejection to claims 14, 15-17, and 25-28 will be repeated below.

7. Applicant's arguments with respect to claims 18 and 20 have been considered but are moot in view of the new ground(s) of rejection due to the amendment to the claims.

8. With regard to claims 18 and 20, applicant argues that Moghadam does not disclose storing photographing conditions of the first panoramic image frame of the set of panoramic images wherein the photographing conditions are one of exposure information, AF information, and white balance information, etc. While it is believed that the indicia can be thought of as a photographing condition, this argument is moot based on the new rejection formulated below.

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Claim Objections

9. Claim 12 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 20 recites the limitation of the photographing conditions include at least one of photometric information, white balance information, a focusing setting, exposure information, and rotation direction. Claim 12, recites the limitation of the photographing conditions including at least one of exposure information, AF information, and white balance information. These three things appear to be stated in claim 20

Claim Rejections - 35 USC § 112

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claim 13 and 22-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

12. Claim 22 recites the limitation "first recording medium" in line 5. There is insufficient antecedent basis for this limitation in the claim. Claims 13, and 23-24 are rejected based upon their dependency upon claim 22.

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Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimori (U.S. Patent No. 5,027,214) in view of Okauchi (U.S. Patent No. 5,907,353).

12. Fujimori discloses an electronic still camera that uses a variable data compression scheme for storing image signals. The camera includes a detachable memory card (17) used to store images taken by the camera, a frame count detecting section (25) for detecting the amount of frames recorded in the memory (18) of the memory card (17), a remaining capacity calculating/determining section (24) for determining the amount of available space left in the memory card upon insertion (col. 7, lines 34-37), a system controller (2) for estimating the number of images which can be recorded in the memory (18) (col. 7, lines 5-7), and a warning means for letting the user know that the amount of memory remaining may not be sufficient for recording the image or images (col. 7, lines 11-21). Fujimori also discloses a comparison step wherein the total amount of data from the images taken (MAX) is compared to the remaining memory (REM) to see if the images will fit onto the memory card (18) (col. 8, lines 34-57). In column 8, lines 50-57, Fujimori also discloses that a number (N) is displayed that represents the remaining number of images capable of being taken. Also disclosed is a displayed warning

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telling the user that the next image cannot be recorded on the memory and that the user should insert a new memory card to continue taking pictures (col. 9, lines 34-49).

Fujimori, however, does not disclose a predicted number setting means for setting the number of images predicted to be taken, or a comparison means for comparing the remaining number of images with the predicted number of images to be taken and displaying a warning based on the comparison. Okauchi, on the other hand discloses a system for producing high-resolution images which sets the number of images to be taken according to the size of the object. Based upon the focus setting and the size of the object the system sets a number of images to be taken. Therefore, the system is predicting how many images will be taken based on the size and focal length. These images are then synthesized to form one complete, high-resolution image thereby forming a panoramic image. See col. 6, lines 6-34. Furthermore, the system can operate to divide the image into more or less than the four images discussed in col. 6, lines 6-34 and can even be arbitrarily set (col. 7, lines 39-52). Since the number of images to be taken is derived in Okauchi, it would have been obvious to compare the number of images derived and compare it to the number of images remaining in the memory and to generate a warning according to the comparison as discussed in Fujimori. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to predict the number of images to be taken as in Okauchi and compare that number with the number of images remaining on the memory card as in Fujimori to accommodate the user when taking pictures so the user knows when the memory is full and to insert a new memory card if the memory card is indeed full. This will aid the photographer so that any size of panoramic image can be taken and that the photographer does not have to take memory capacity into consideration when taking pictures.

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13. Claims 15-17 and 25-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimori (U.S. Patent No. 5,027,214) in view of Moghadam et al. (5,682,197).

Regarding claim 15, Fujimori discloses an electronic still camera for taking a multitude of images that uses a variable data compression scheme for storing the image signals. The camera includes a detachable memory card (17) used to store images taken by the camera, a frame count detecting section (25) for detecting the amount of frames recorded in the memory (18) of the memory card (17), a remaining capacity calculating/determining section (24) for determining the amount of available space left in the memory card upon insertion (col. 7, lines 34-37), a system controller (2) for estimating the number of images which can be recorded in the memory (18) (col. 7, lines 5-7), and a warning means for letting the user know that the amount of memory remaining may not be sufficient for recording the image or images (col. 7, lines 11-21). Fujimori also discloses a comparison step wherein the total amount of data from the images taken (MAX) is compared to the remaining memory (REM) to see if the images will fit onto the memory card (18) (col. 8, lines 34-57). In column 8, lines 50-57, Fujimori also discloses that a number (N) is displayed that represents the remaining number of images capable of being taken. Also disclosed is a displayed warning telling the user that the next image cannot be recorded on the memory and that the user should insert a new memory card to continue taking pictures (col. 9, lines 34-49). Therefore, when the remaining capacity (REM) of the memory card is insufficient to record another image, the number of frames remaining (N) would be zero thus necessitating the need for the warning and a new memory card.

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Fujimori, however, fails to disclose a panoramic camera system. Moghadam, on the other hand discloses a camera capable of operating in a normal photographing mode or a panoramic photographing mode. The camera includes the use of a memory card (70) for saving the image information. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a panoramic mode in the camera of Fujimori in order to give the user more options when taking pictures thereby utilizing the method for determining the remaining capacity of a memory card as disclosed in Fujimori, in order to utilize the efficient use of the memory card.

14. As for claim 16, as mentioned previously, Fujimori discloses an operation wherein if the remaining capacity (REM) is deemed to be too small to store an additional image a warning is generated. Fujimori also discloses calculating a number (N) which represents the number of additional images capable of being photographed (col. 8, line 50). Furthermore, when the memory card is full a warning is displayed informing the user to insert another memory card (col. 9, lines 34-49). Therefore, when the number N is equal to zero a warning will be generated telling the user to insert a new memory card.

15. With regards to claim 17, Fujimori discloses displaying a warning when the memory card has reached its full capacity informing the photographer to insert a new memory card to continue taking images (col. 9, lines 34-49).

16. With regards to claim 25, Fujimori discloses an electronic still camera for taking a multitude of images that uses a variable data compression scheme for storing the image signals. The camera includes a detachable memory card (17) used to store images taken by the camera, a frame count detecting section (25) for detecting the amount of frames recorded in the memory

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(18) of the memory card (17), a remaining capacity calculating/determining section (24) for determining the amount of available space left in the memory card upon insertion (col. 7, lines 34-37), a system controller (2) for estimating the number of images which can be recorded in the memory (18) (col. 7, lines 5-7), and a warning means for letting the user know that the amount of memory remaining may not be sufficient for recording the image or images (col. 7, lines 11-21). Fujimori also discloses a comparison step wherein the total amount of data from the images taken (MAX) is compared to the remaining memory (REM) to see if the images will fit onto the memory card (18) (col. 8, lines 34-57). In column 8, lines 50-57, Fujimori also discloses that a number (N) is displayed that represents the remaining number of images capable of being taken. Also disclosed is a displayed warning telling the user that the next image cannot be recorded on the memory and that the user should insert a new memory card to continue taking pictures (col. 9, lines 34-49). Therefore, when the remaining capacity (REM) of the memory card is insufficient to record another image, the number of frames remaining (N) would be zero thus necessitating the need for the warning and a new memory card.

Fujimori, however, fails to disclose a panoramic camera or identification data representing the set of panoramic images. Moghadam, on the other hand, discloses a panoramic camera (10) capable of operating in a normal photographing mode or a panoramic photographing mode. The camera includes the use of a memory card (70) for saving the image information. Moghadam also discloses including identification information with the panoramic images which represents the number sequence of each image (col. 4, lines 47-51). The identification information allows for easier processing and better identification. Therefore, it would have been obvious to use the memory card capacity system of Fujimori with a panoramic camera which

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saves images on a memory card in order to allow the photographer to take any number of images in a panoramic scene so as not to limit the photographer to the memory contained in one memory card and additionally, to identify each of the image with an identifier for more coherent processing.

17. Claim 26 includes the further limitation upon claim 25 wherein the identification information is one of a file name shared by all images or a panorama number representing a photographing order. Moghadam discloses that when the camera is in the panoramic mode that the control processor (32) inserts the number and order of each image in the sequence in the header (52). See column 4, lines 1-10. It would have been obvious to continue this process of tagging images in a sequence on the second recording medium so that processing of the entire panoramic image could be carried out.

18. Regarding claim 27, With regards to claim 25, Fujimori discloses an electronic still camera for taking a multitude of images that uses a variable data compression scheme for storing the image signals. The camera includes a detachable memory card (17) used to store images taken by the camera, a frame count detecting section (25) for detecting the amount of frames recorded in the memory (18) of the memory card (17), a remaining capacity calculating/determining section (24) for determining the amount of available space left in the memory card upon insertion (col. 7, lines 34-37), a system controller (2) for estimating the number of images which can be recorded in the memory (18) (col. 7, lines 5-7), and a warning means for letting the user know that the amount of memory remaining may not be sufficient for recording the image or images (col. 7, lines 11-21). Fujimori also discloses a comparison step wherein the total amount of data from the images taken (MAX) is compared to the remaining

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memory (REM) to see if the images will fit onto the memory card (18) (col. 8, lines 34-57). In column 8, lines 50-57, Fujimori also discloses that a number (N) is displayed that represents the remaining number of images capable of being taken. Also disclosed is a displayed warning telling the user that the next image cannot be recorded on the memory and that the user should insert a new memory card to continue taking pictures (col. 9, lines 34-49). Therefore, when the remaining capacity (REM) of the memory card is insufficient to record another image, the number of frames remaining (N) would be zero thus necessitating the need for the warning and a new memory card.

Fujimori, however, fails to disclose a panoramic camera or identification data representing the set of panoramic images. Moghadam, on the other hand, discloses a panoramic camera (10) capable of operating in a normal photographing mode or a panoramic photographing mode. The camera includes the use of a memory card (70) for saving the image information. Moghadam also discloses including identification information with the panoramic images which represents the number sequence of each image (col. 4, lines 47-51). The identification information allows for easier processing and better identification. Therefore, it would have been obvious to use the memory card capacity system of Fujimori with a panoramic camera which saves images on a memory card in order to allow the photographer to take any number of images in a panoramic scene so as not to limit the photographer to the memory contained in one memory card and additionally, to identify each of the image with an identifier for more coherent processing.

19. Claim 28 includes the further limitation upon claim 27 wherein the identification information is one of a file name shared by all images or a panorama number representing a

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photographing order. Moghadam discloses that when the camera is in the panoramic mode that the control processor (32) inserts the number and order of each image in the sequence in the header (52). See column 4, lines 1-10. It would have been obvious to continue this process of tagging images in a sequence on the second recording medium so that processing of the entire panoramic image could be carried out.

20. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimori (U.S. Patent No. 5,027,214) in view of Moghadam et al. (5,682,197) and further in view of Udagawa et al. (U.S. Patent No. 6,195,125).

21. Regarding claim 18, Fujimori discloses an electronic still camera for taking a multitude of images that uses a variable data compression scheme for storing the image signals. The camera includes a detachable memory card (17) used to store images taken by the camera, a frame count detecting section (25) for detecting the amount of frames recorded in the memory (18) of the memory card (17), a remaining capacity calculating/determining section (24) for determining the amount of available space left in the memory card upon insertion (col. 7, lines 34-37), a system controller (2) for estimating the number of images which can be recorded in the memory (18) (col. 7, lines 5-7), and a warning means for letting the user know that the amount of memory remaining may not be sufficient for recording the image or images (col. 7, lines 11-21). Fujimori also discloses a comparison step wherein the total amount of data from the images taken (MAX) is compared to the remaining memory (REM) to see if the images will fit onto the memory card (18) (col. 8, lines 34-57). In column 8, lines 50-57, Fujimori also discloses that a number (N) is displayed that represents the remaining number of images capable of being taken.

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Also disclosed is a displayed warning telling the user that the next image cannot be recorded on the memory and that the user should insert a new memory card to continue taking pictures (col. 9, lines 34-49). Therefore, when the remaining capacity (REM) of the memory card is insufficient to record another image, the number of frames remaining (N) would be zero thus necessitating the need for the warning and a new memory card.

Fujimori, however, fails to disclose a panoramic camera which includes a photographing information storage element to store photographing conditions and a control element for taking subsequent images according to the stored photographing conditions. Moghadam, on the other hand discloses a camera capable of operating in a normal photographing mode or a panoramic photographing mode. The camera includes the use of a memory card (70) for saving the image information. The camera system also includes saving photographing information along with the image and using the photographing image in subsequent images. More specifically, Moghadam discloses the use of indicia (22 and 24) for aligning images. The indicia serve as photographing information by saving the address in the indicia address memory (60) (col. 4, lines 15-22) of the indicia thereby showing where the camera was aligned in the previous images. Moghadam discloses combining a plurality of images to form a panoramic image. The data generated by the images of Moghadam is inherently stored in some way. Since Moghadam discloses storing a plurality of images it would have been obvious to manage the data of Moghadam by detecting the amount of storage left in the memory. Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Fujimori and Moghadam to develop a panoramic camera capable of efficient memory management allowing the user to continually

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take images with several memory cards so that all of the images that a user would like to take can be imaged.

Additionally, neither Fujimori nor Moghadam disclose that the photographing conditions include at least one of exposure information, AF information and white balance information. Udagawa, however, discloses an electronic camera used for combining images to form a higher definition image that takes a series of photographs under the same photographing conditions. Column 13, line 60 to column 14, line 26 disclose that a series of images are taken under the same focus, exposure, and white balance as the first image sensed. Udagawa teaches that by taking subsequent images under the same conditions as the first, the plurality of images is easier to combine and slows battery consumption (col. 14, lines 24-26). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to take panoramic images under the same conditions as the other images in order to avoid additional processing and to slow battery consumption.

22. Claims 20 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moghadam et al. (U.S. Patent No. 5,682,197) in view of Udagawa et al. (U.S. Patent No. 6,195,125).

23. Regarding claim 20, Moghadam discloses a camera capable of operating in a normal photographing mode or a panoramic photographing mode. The camera includes the use of a memory card (70) for saving the image information. The camera system also includes saving photographing information along with the image and using the photographing image in subsequent images. More specifically, Moghadam discloses the use of indicia (22 and 24) for

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aligning images. The indicia serve as photographing information by saving the address in the indicia address memory (60) (col. 4, lines 15-22) of the indicia thereby showing where the camera was aligned in the previous images. This is used to compose subsequent images by saving the address of the indicia and using the indicia to photograph the next image

Moghadam, however, fails to disclose that the photographing conditions include one of photometric information, white balance information, a focusing setting, exposure information, and a rotation direction. Udagawa, on the other hand, discloses an electronic camera used for combining images to form a higher definition image that takes a series of photographs under the same photographing conditions. Column 13, line 60 to column 14, line 26 disclose that a series of images are taken under the same focus, exposure, and white balance as the first image sensed. Udagawa teaches that by taking subsequent images under the same conditions as the first, the plurality of images is easier to combine and slows battery consumption (col. 14, lines 24-26). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to take panoramic images under the same conditions as the other images in order to avoid additional processing and to slow battery consumption.

Regarding claim 12, Udagawa discloses in column 13, line 60 to column 14, line 26 disclose that a series of images are taken under the same focus, exposure, and white balance as the first image sensed. Udagawa teaches that by taking subsequent images under the same conditions as the first, the plurality of images is easier to combine and slows battery consumption (col. 14, lines 24-26).

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24. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moghadam et al. (U.S. Patent No. 5,682,197) in view of Udagawa et al. (U.S. Patent No. 6,195,125) and further in view of Fujimori (U.S. Patent No. 5,027,214).

25. Regarding claim 22, as mentioned above in the discussion of claim 20 both Moghadam and Udagawa disclose all of the limitations of the parent claim. However neither of the aforementioned references discloses the limitations of claim 22. Fujimori, on the other hand, discloses an electronic still camera that uses a variable data compression scheme for storing image signals. The camera includes a detachable memory card (17) used to store images taken by the camera, a frame count detecting section (25) for detecting the amount of frames recorded in the memory (18) of the memory card (17), a remaining capacity calculating/determining section (24) for determining the amount of available space left in the memory card upon insertion (col. 7, lines 34-37), a system controller (2) for estimating the number of images which can be recorded in the memory (18) (col. 7, lines 5-7), and a warning means for letting the user know that the amount of memory remaining may not be sufficient for recording the image or images (col. 7, lines 11-21). Fujimori also discloses a comparison step wherein the total amount of data from the images taken (MAX) is compared to the remaining memory (REM) to see if the images will fit onto the memory card (18) (col. 8, lines 34-57). In column 8, lines 50-57, Fujimori also discloses that a number (N) is displayed that represents the remaining number of images capable of being taken. Also disclosed is a displayed warning telling the user that the next image cannot be recorded on the memory and that the user should insert a new memory card to continue taking pictures (col. 9, lines 34-49). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a memory capacity warning

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indicator in the camera of Moghadam so the user is informed about how many remaining images the memory card can hold.

14. Claims 13 and 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moghadam et al. (U.S. Patent No. 5,682,197) in view of Udagawa et al. (U.S. Patent No. 6,195,125) and further in view of Fujimori (U.S. Patent No. 5,027,214) and Okauchi (U.S. Patent No. 5,907,353).

15. Regarding claim 23, as mentioned above in the discussion of claim 22, Moghadam, Udagawa, and Fujimori disclose all of the limitations of the parent claim. However, none of the aforementioned references discloses the limitations of claim 23. Okauchi, on the other hand discloses a system for producing high-resolution images which sets the number of images to be taken according to the size of the object. Based upon the focus setting and the size of the object the system sets a number of images to be taken. Therefore, the system is predicting how many images will be taken based on the size and focal length. These images are then synthesized to form one complete, high-resolution image thereby forming a panoramic image. See col. 6, lines 6-34. Furthermore, the system can operate to divide the image into more or less than the four images discussed in col. 6, lines 6-34 and can even be arbitrarily set (col. 7, lines 39-52). Since the number of images to be taken is derived in Okauchi, it would have been obvious to compare the number of images derived and compare it to the number of images remaining in the memory and to generate a warning according to the comparison as discussed in Fujimori. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to predict the number of images to be taken as in Okauchi and compare that number with the number of

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images remaining on the memory card as in Fujimori to accommodate the user when taking pictures so the user knows when the memory is full and to insert a new memory card if the memory card is indeed full. This will aid the photographer so that any size of panoramic image can be taken and that the photographer does not have to take memory capacity into consideration when taking pictures.

Claim 24 includes the added limitation upon claim 23 wherein the apparatus further includes means for checking whether the second recording medium has been interchanged for the first recording medium. Fujimori discloses once the capacity of the memory card (17) has been reached, photographing operations are inhibited and the system waits for a second memory card to replace the first. See column 9, lines 43-46. This implies that there is a means for checking whether or not a new memory card has been inserted.

Claim 13 includes the added limitation upon claim 23 wherein the identification information is one of a file name shared by all images or a panorama number representing a photographing order. Moghadam discloses that when the camera is in the panoramic mode that the control processor (32) inserts the number and order of each image in the sequence in the header (52). See column 4, lines 1-10. It would have been obvious to continue this process of tagging images in a sequence on the second recording medium so that processing of the entire panoramic image could be carried out.

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any response to this final action should be mailed to:

Box AF
Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 308-6306, (for formal communications; please mark "**EXPEDITED PROCEDURE**"; for informal or draft communications, please label "**PROPOSED**" or "**DRAFT**")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John M. Villecco whose telephone number is (703) 305-1460. The examiner can normally be reached on Monday through Thursday from 7:00 am to 5:30 pm EST.

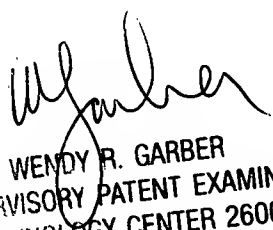
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber, can be reached on (703) 305-4929. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the customer service desk whose telephone number is (703) 306-0377.



JMV
9/11/02



WENDY R. GARBER
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